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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,363

10/28/2003

Stewart R. Wyatt

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08/10/2006

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EXAMINER

SUN, SCOTT C

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,363	WYATT ET AL.	
	Examiner	Art Unit	
	Scott Sun	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9 and 25-37 is/are pending in the application.
- 4a) Of the above claim(s) 25-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/12/2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 2, 4-9 have been considered but are moot in view of the new ground(s) of rejection.

Election/Restrictions

3. Newly submitted claims 25-37 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

4. This application contains claims directed to the following patentably distinct species:

- a. Species I, claims 1, 2, 4-9, directed to turning off a portion of a storage system based on an amount of data in a buffer (figure 2).
- b. Species II, claims 25-37, directed to turning off a portion of a storage system while transferring data from a buffer (figure 3).

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The species are independent or distinct because species I defines a condition under which to enter power saving mode, while species II defines an operation that occur during power saving mode.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 25-37 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Claims 1, 2, 4-~~9~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost
(US Patent #4,288,860) in view of Silvester (PG Pub # US 2003/0067847).

7. As per claim 1, Trost discloses a storage system, comprising:

a storage controller (system between requestor and storage in figure 1) for managing transfer of data between a host (requestor 11) and storage memory (storage 10);

a data mover (storage control 12) coupled to the storage controller, the data mover handles data transferred between the host and the storage memory, and

a buffer (register stack 21) coupled to the data mover for storing data being transferred between the host and the storage memory (column 1, lines 51-60; column 3, lines 1-24).

Trost does not disclose expressly wherein, to conserve power, the storage controller selectively turns off a portion of the storage system based on an amount of data in the buffer. However, Silvester discloses the storage controller modifies operation of the storage system by turning off a portion (disk system) of the storage system (figure 2). Teachings of Trost and Silvester are from the same field of power consumption, and specifically of data storage systems.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Trost's invention and Silvester's invention by adding power-saving error correction logic disclosed in Silvester's invention to Trost's invention to further provide Trost's storage system with further power saving features when data are not read from the storage (Silvester, paragraph 15).

8. As per claim 2, Trost and Silvester combined discloses the storage system of claim 1, and Silvester further discloses wherein the storage controller selectively turns off a portion of the storage system based on capacity of the buffer (paragraph 15).

9. As per claim 4, Trost and Silvester combined discloses the storage system of claim 1, and Trost further discloses wherein data is transferred between the data mover and host at a first transfer rate, and data is transferred between the data mover and

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storage memory at a second transfer rate, and wherein the storage controller selectively matches the first and second transfer rates (Column 6, lines 66 – column 7, line 6).

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trost in view of Silvester and further in view of Wyatt et al, (PG Pub #2003/0172325).

11. As per claim 5, Trost and Silvester combined discloses the storage system of claim 1, and but does not disclose explicitly storage interface including error correction logic. However, Wyatt discloses a storage memory interface coupled to the data mover, the storage memory interface handles data transferred to and from storage memory, the storage memory interface also including error correction logic (paragraphs 3-10).

Teachings of Trost, Silvester, and Wyatt are from the same field of data storage systems.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine teachings of Trost with teachings of Silvester and further with teachings of White by adding ECC to protect the system from data errors (Wyatt, paragraph 10).

Allowable Subject Matter

12. Claims 6-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: claims 6-9 recites, inter alia, turning off the error correction logic of the storage memory interface based on an amount of data in the buffer. Prior art of record do not teach or suggest, either alone or in combination, the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Sun whose telephone number is (571) 272-2675. The examiner can normally be reached on M-F, 10:30am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SS



KIM HUYNH
SUPERVISORY PATENT EXAMINER

8/7/06